

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: KENJI NAKABAYASHI ET AL

Continuation of

Serial No.: 09/499,627

Group Art Unit: 3747

Filed: February 8, 2000

Examiner: A. Dolinar

Title: IGNITION COIL FOR INTERNAL COMBUSTION ENGINE

PRELIMINARY AMENDMENT

Box Non-Fee Amendment

December 21, 2001

Commissioner for Patents

Washington, D.C. 20231

Sir:

Please enter the following amendments to the claims prior to the examination of the application.

IN THE CLAIMS:

Please amend claims 5, 6, and 11-13 as follows (a copy of the marked-up version of amended claims 5, 6, and 11-13 are attached to this Preliminary Amendment):

5. An ignition coil for an internal combustion engine according to claim 1, the secondary coil bobbin is constituted by 45 weight %~60 weight % of denaturated PPE, 15 weight %~25 weight % of glass fiber and 15 weight %~ 35 weight % of inorganic filler material in a non-fiber shape.

6. An ignition coil for an internal combustion engine according to claim 1, wherein a bobbin axial direction of the secondary coil bobbin corresponds to a resin flowing direction during molding of the resin, and an average linear

expansion coefficient of the secondary coil bobbin in orthogonal direction with respect to the resin flowing direction is $35\sim 75 \times 10^{-6}$ at temperatures $-30^{\circ}\text{C}\sim -10^{\circ}\text{C}$ according to a testing method conforming to ASTM D696.

11. An ignition coil for an internal combustion engine according to claim 7, wherein a material of the cover film or the cover coating is an insulation material containing one of nylon, polyethylene and teflon.

12. An ignition coil for an internal combustion engine according to claim 1, wherein the primary coil bobbin is constituted by a polybutylene terephthalate containing a rubber.

13. An ignition coil for an internal combustion engine according to claim 1, wherein the center core is coated with an insulation material having an elasticity before being disposed inside the secondary coil bobbin, and after the coated center core is disposed in the secondary coil bobbin a hard epoxy resin is filled between the center core and the secondary coil bobbin.

REMARKS


Entry of the amendments to the claims before examination of the application is respectfully requested. These claims have been amended to remove multiple dependencies.

If there are any questions regarding this Preliminary Amendment or this application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

It is respectfully requested that, if necessary to effect a timely response, this paper be considered as a Petition for an Extension of Time sufficient to effect a timely response and shortages in other fees, be charged, or any overpayment in

fees be credited, to the Account of Evenson, McKeown, Edwards & Lenahan,
P.L.L.C., Deposit Account No. 05-1323 (Docket #381NT/48610CO).

Respectfully submitted,


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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claims 5, 6, and 11-13 as follows

5. An ignition coil for an internal combustion engine according to [one of claims 1 through 4] claim 1, the secondary coil bobbin is constituted by 45 weight %~60 weight % of denaturated PPE, 15 weight %~25 weight % of glass fiber and 15 weight %~ 35 weight % of inorganic filler material in a non-fiber shape.

6. An ignition coil for an internal combustion engine according to [one of claims 1 through 5] claim 1, wherein a bobbin axial direction of the secondary coil bobbin corresponds to a resin flowing direction during molding of the resin, and an average linear expansion coefficient of the secondary coil bobbin in orthogonal direction with respect to the resin flowing direction is $35\sim75\times10^{-6}$ at temperatures $-30^{\circ}\text{C}\sim-10^{\circ}\text{C}$ according to a testing method conforming to ASTM D696.

11. An ignition coil for an internal combustion engine according to [one of claim 7 through 10] claim 7, wherein a material of the cover film or the cover coating is an insulation material containing one of nylon, polyethylene and teflon.

12. An ignition coil for an internal combustion engine according to [one of claims 1 through 11] claim 1, wherein the primary coil bobbin is constituted by a polybutylene terephthalate containing a rubber.

13. An ignition coil for an internal combustion engine according to [one of claims 1 through 12] claim 1, wherein the center core is coated with an

insulation material having an elasticity before being disposed inside the secondary coil bobbin, and after the coated center core is disposed in the secondary coil bobbin a hard epoxy resin is filled between the center core and the secondary coil bobbin.